

## SystemC CCI WG Search Predicate

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### **Search Predicate**

- The owner module simple\_ip has CCI parameters of different data types.
- A module search\_ip performs various searches and reports the matching parameters.
- In this example, module search\_ip performs the following parameter searches:
  - Integer value type
  - String value type
  - Numeric value greater than or equal to 3 and smaller than 85
  - Parameter name contains the character 't'



# **Example Sequence Diagram**

**CCI** parameters representing basic data types

simple\_ip

cci\_param<bool> bool\_param;
cci\_param<char> char\_param;
cci\_param<unsigned char> uchar\_param;
cci\_param<int> int\_param;
cci\_param<unsigned int> uint\_param;
cci\_param<float> float\_param;
cci\_param<double> double\_param;
cci\_param<std::string> string\_param;

CCI parameter 'Owner' module



# **Example Sequence Diagram**

The search\_ip module which search sim\_ip's parameter

search\_ip

#### Original List

Displays the original list of parameters in simple\_ip

#### Integers only

static bool integer\_type\_predicate(const cci\_param\_untyped\_handle handle)

#### String only

static bool string\_type\_predicate(const cci\_param\_untyped\_handle handle)

#### Numbers greater that or equal to 3 and smaller than 85 only

bool value\_in\_range\_predicate(const cci\_param\_untyped\_handle handle, double greater\_eq, double lower)

Searches simple\_ip's parameter

#### Parameter name contains at least 't' only

bool name\_contains\_character\_predicate( const cci\_param\_untyped\_handle handle, const character)



## **Expected Output**

(ex22\_Search\_Predicate.log)

```
SystemC Simulation
Info: sim ip: @0 s, @Ctor: Default value of sim ip.bool param is 1
Info: sim ip: @0 s, @Ctor: Default value of sim ip.char param is A
Info: sim_ip: @0 s, @Ctor: Default value of sim_ip.uchar_param is U
Info: sim ip: @0 s, @Ctor: Default value of sim ip.int param is -1
Info: sim ip: @0 s, @Ctor: Default value of sim ip.uint param is 0xfeedf00d
Info: sim ip: @0 s, @Ctor: Default value of sim ip.float param is 3.14
Info: sim ip: @0 s, @Ctor: Default value of sim ip.double param is 2.714
Info: sim ip: @0 s, @Ctor: Default value of sim ip.string param is C++ String
Info: sc main: Begin Simulation.
Info: srch ip: @0 s, execute: Original list
sim ip.bool param = true
sim ip.char param = 65
sim ip.double param = 2.714
sim ip.float param = 3.140000104904175
sim ip.int param = -1
sim_ip.string_param = "C++ String"
sim ip.uchar param = 85
sim ip.uint param = 4277006349
```



### Cont'd

```
Info: srch ip: @0 s, execute: Integers only
sim_ip.char_param = 65
sim ip.int param = -1
sim_ip.uchar_param = 85
sim ip.uint param = 4277006349
Info: srch ip: @0 s, execute: String only
sim ip.string param = "C++ String"
Info: srch_ip: @0 s, execute: Numbers greater than or equal to 3 and smaller than 85
only
sim_ip.char_param = 65
sim ip.float param = 3.140000104904175
Info: srch ip: @0 s, execute: Parameter name contains at least 't' only
sim ip.float param = 3.140000104904175
sim ip.int param = -1
sim ip.string param = "C++ String"
sim ip.uint param = 4277006349
Info: sc main: End Simulation.
```

